Cooperation mechanisms

Jacobsen, Henrik; Hansen, Lise-Lotte Pade

Publication date:
2011

COOPERATION MECHANISMS

Henrik Klinge Jacobsen & Lise-Lotte Pade Hansen

Risø DTU
National Laboratory for Sustainable Energy

IEE Project Res4less www.res4less.eu

COOPERATION MECHANISMS

- Types of cooperation
- Benefits of cooperation
- Barriers for cooperation
- Cooperation mechanisms analysed in case studies for off-shore wind, biomass and solar power generation

TYPES OF COOPERATION MECHANISMS

- Statistical Transfers
- Joint Projects
- Joint Support Scheme

- Regulatory requirements/changes increase from statistical transfers to joint support scheme

TYPES OF COOPERATION MECHANISMS IN OUR ANALYSIS

- Statistical Transfers
- Joint Projects
- Joint Support Schemes

- Regulatory requirements could still involve transfers under joints projects and joint support schemes

COOPERATION BENEFITS

- Increased competition in RES supply and thereby:
- Cost reduction in meeting RES target
- Cost reduction in meeting CO2 obligations – not additional reductions
- More efficient electricity production – additional RES located were the electricity has the highest value (capacity needed)
- Located where RES integration costs are the lowest
- Harmonisation initiated and tested on small scale without abandoning existing regulation and support scheme
- Possible risk reduction in national RES target compliance and support costs

OBJECTIVES

- Identify barriers that must be removed to use specific cooperation mechanisms and which mechanisms has the least barriers in different situations

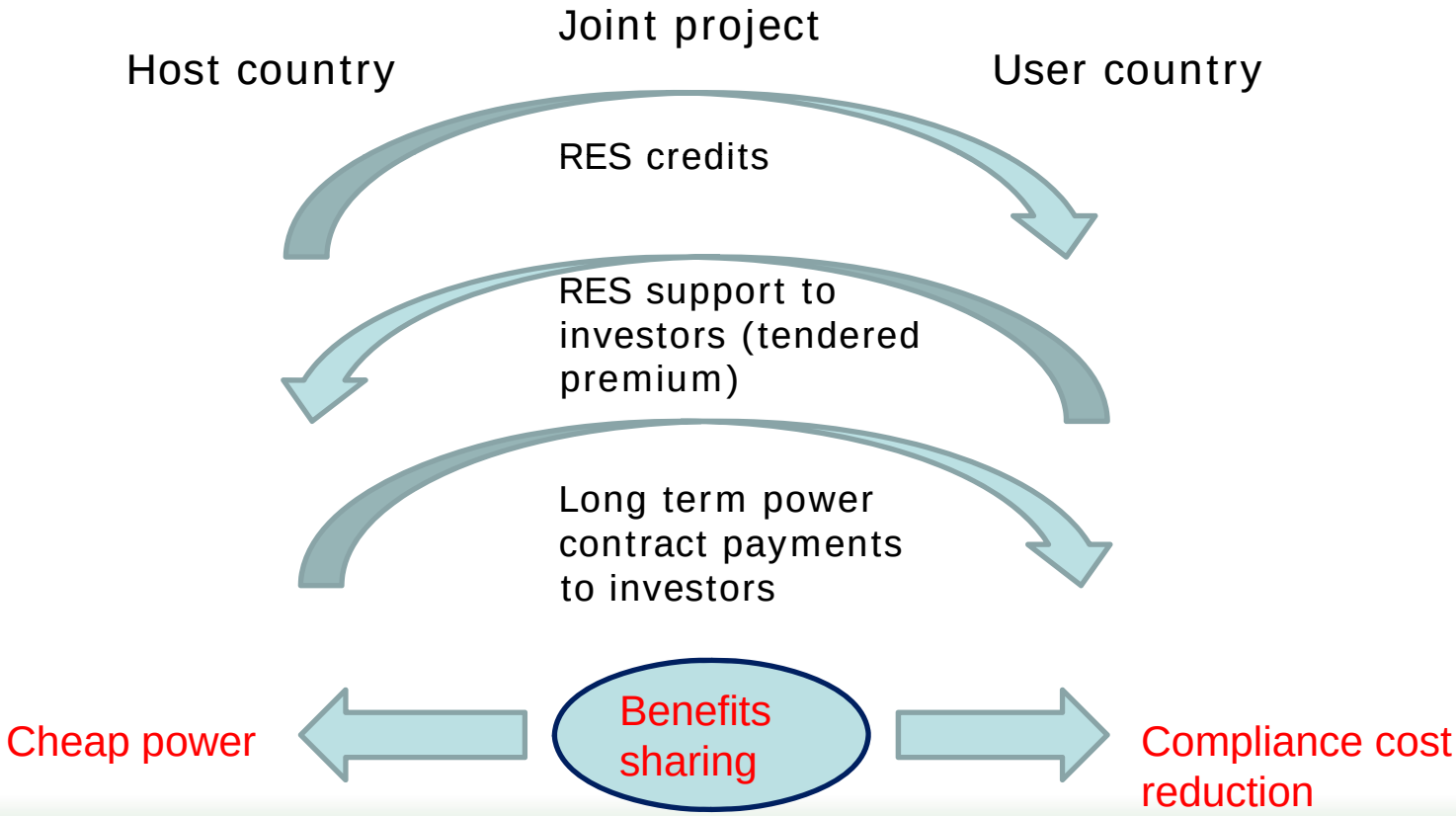
- Identify the coordination mechanisms that can be employed to support the inclusion of excess RES potentials and reduce the target compliance costs in the short run

- Examine for the three technologies wind, biomass and solar *how* the potentials can be exploited with the identified cooperation mechanisms

Barriers and critical factors for cooperation success

- Legislation for renewables/support
- Level of support and type of support scheme
- Market organisation differences – power market price levels
- Corporate tax rates and tax credits
- Sharing benefits/compensation rules
- Impact on other domestic conditions/disincentives to invest in non-covered regions/technologies
- Secondary benefits – employment/business activity concerns (if investment elsewhere how can these concerns be included?)
- Do the technologies behave differently with respect to barriers?

Compensation and RES credits principles
Host and donor country full transfer



COOPERATION COST ISSUES

- Cost sharing in terms of financial support to investors
- Cost increase (support level) in some area/country
- Cost of connections and network reinforcement
- Integration costs of renewable variable generation technologies
- Competition between domestic support area and the cooperation area/project

Timing of contracts under cooperation mechanisms and risk sharing for both countries and investors

A critical difference between cooperation mechanisms is the timing of contractual arrangements for investments and the RES target

Investments with a long lifetime and considerable uncertainties do not match RES targets for a single year, namely 2020

The RES credits beyond 2020 have a certain value as do the value of the generated electricity and avoided CO2 emission beyond 2020

Swapping of RES credits in time:
We will address how joint projects might incorporate flows of RES credits that varies in time

For example: a joint project might transfer the RES credits to a donor country in 2020 against full support from that country up to 2020. Beyond the 2020 target the credits generated will be shared 50/50 between countries as will the support costs

BROAD OR NARROW DEFINITION OF JOINT SUPPORT SCHEMES

- Moving to a common support system for at least two countries
- Identified as the most demanding in terms of changing RES legislation, network regulation and grid codes
- With the highest potential for cost reductions
- An alternative less complicated option can be found in the introduction of a joint support system for a segment of the RES market; for example a technology or specific border area
- Retaining the national support systems and all other sector regulation is possible in combination with introducing support systems
- As a majority of the expected excess RES potentials available in some countries are technology specific the joint support schemes could be designed to cover just one technology in both countries

Case studies – technology focused

- Wind – we expect to focus on off-shore wind in the North sea
- Biomass – with focus on central/eastern Europe
- Solar – with focus on Southern Europe

Case studies content

Off-shore Wind: intended setup

Examine a case with 5 GW new installed capacity in north sea area including a shared siting in at least two markets/support areas Denmark, UK, Germany, Netherlands

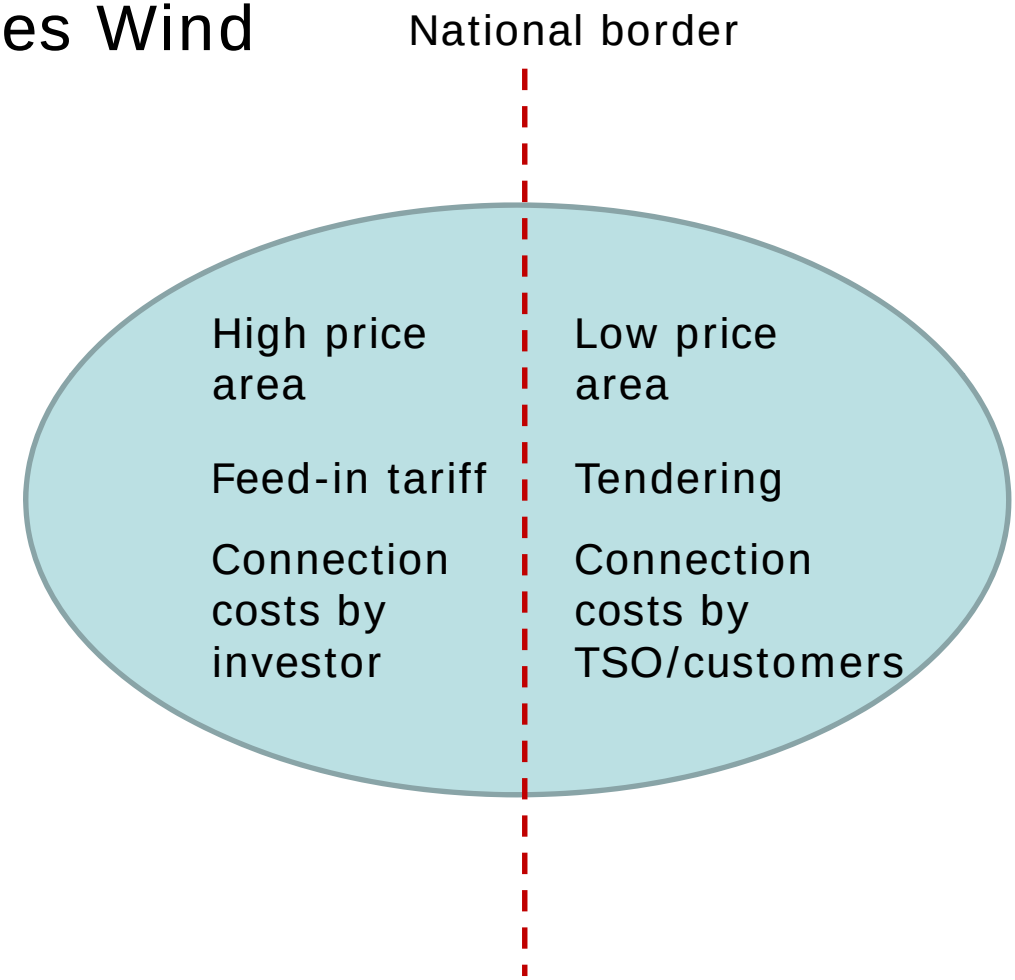
Analyse the setup of a common tendering scheme in this area: Exclude the area from national support scheme and use a new common tendering:

Address the issues/barriers related to different connection rules, tax, and the cost sharing especially in relation to connection costs and benefits

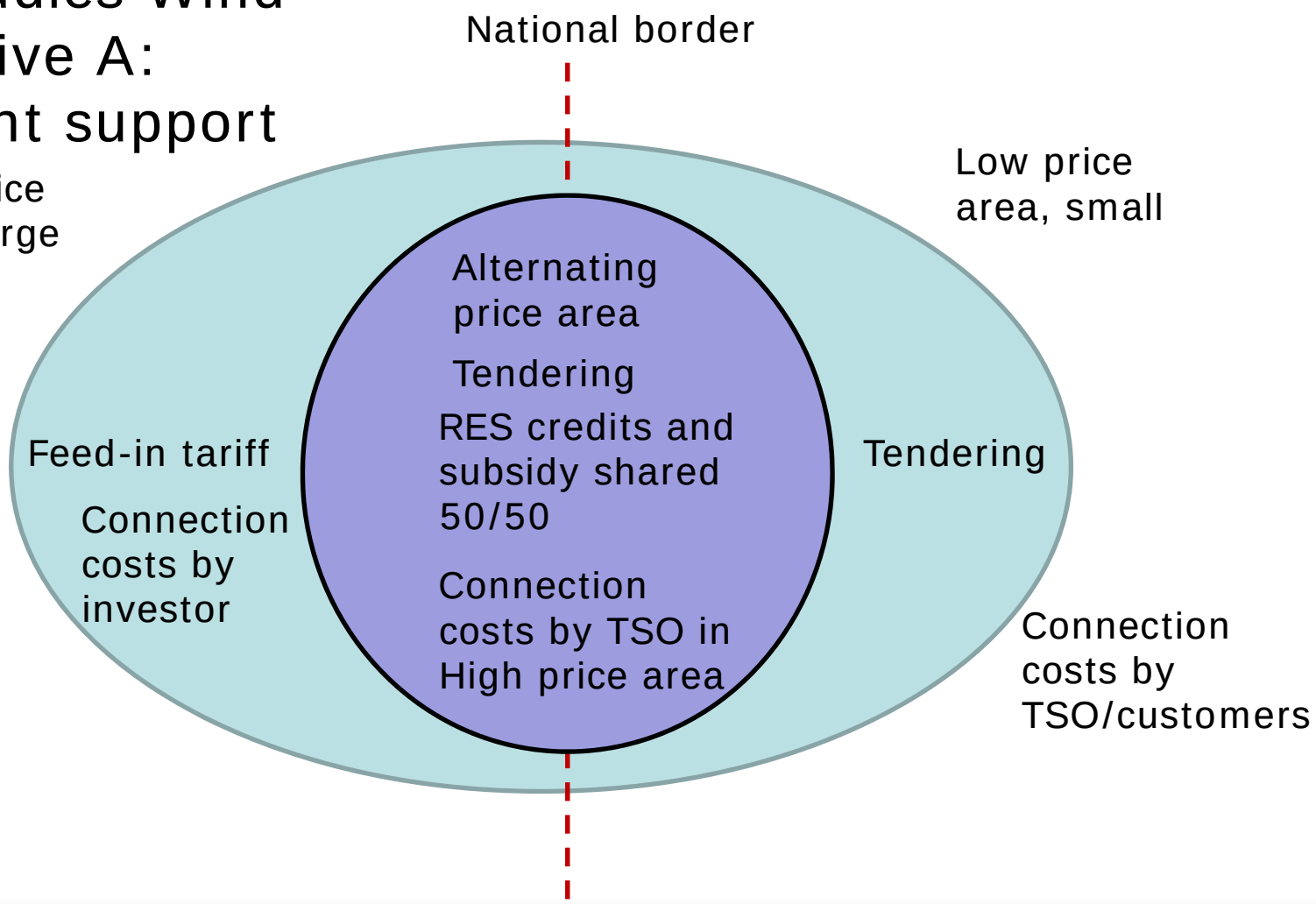
Address the direct effect on:

- national markets
- generator revenue
- costs

Case studies Wind



Case studies Wind Alternative A: local joint support



Discussion issues

- Contribution from participants are most welcome
- Power markets: benefits and costs in cooperation
- Benefits for host country?
- Market aspects – power market prices – where?
- Case studies – how much focus on pre 2020 relative to 2020-2030?
- Which types of coordination mechanisms most relevant for case studies on biomass and solar?

Thank you!

Risø DTU
National Laboratory for Sustainable Energy

Henrik Klinge Jacobsen (jhja@risoe.dtu.dk)
Lise-Lotte Pade Hansen (llph@risoe.dtu.dk)